



# RT3<sup>TM</sup> COLOR camera

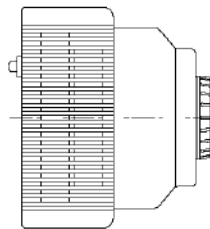
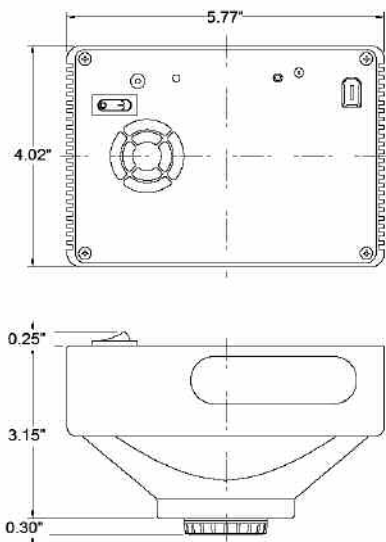


The **RT3** Color digital camera system is excellent for brightfield and some fluorescence imaging applications. The **RT3** Color is the newest camera version from the popular RT line of cameras, and delivers improved performance in a number of areas.

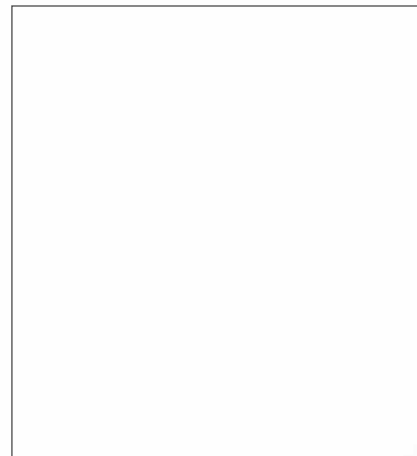
The **RT3** Color camera is a 14-bit camera featuring high speed FireWire connectivity. The color mosaic version delivers exceptional color images, through the application of ICC color profiling standards.

The **RT3** Color digital system boasts reduced read noise, providing higher dynamic range when combined with the deep pixel wells of its Kodak KAI 2020CM CCD. Frame capture rates have been tripled when compared with its predecessor.

RT3 DIMENSIONS



RT3 POWER SUPPLY



## CAMERA FEATURES

- CCD cooled to  $-43.3^{\circ}\text{C}$  below ambient
- 1600 x 1200 (1.92 Mpixel) image capture
  - Programmable gain (1-16x)
  - 14 bit x 20 MHz capture
- 40 MHz live mode (dual channel 20 MHz)
  - Interline progressive scan CCD
  - FireWire<sup>®</sup> interface

**SPOT<sup>TM</sup> Software**  
Mac<sup>®</sup> & Windows<sup>®</sup> operating systems  
Basic & Advance applications  
Twain & Apple Event  
DLL w/ SDK and tutorial manual  
3rd party driver support

Reduces dark noise for long exposure image capture

Resolves fine detail

Facilitates live mode previews of low light specimens

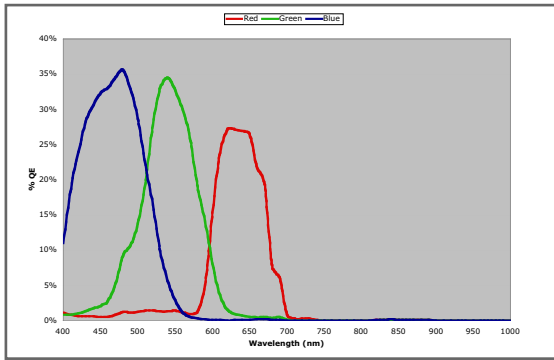
Extra bit depth is ideal for image enhancement

High-speed imaging for real time viewing

Electronic shuttering eliminates mechanical shutter shortcomings related to speed, wear, and vibration

Allows for effortless installation, hot-swapping, and laptop connectivity for greater ease of use

Provides essential tools for modern microscopy and is widely supported by 3rd party software companies for high end applications as well as providing DLL with SDK for OEM Driver development



**CCD INFORMATION**

Kodak KAI-2020-M with cover glass  
 Monochrome progressive scan interline CCD  
 1600 x 1200, 7.4 µm square pixels  
 11.8mm x 8.9 mm active area, 14.8 mm diagonal  
 100x minimum anti-blooming

**COOLING**

-43.3°C differential from ambient via thermoelectric cooler  
 with fan cooled heat sink (-23.3°C from an ambient of 20°C)

**DIGITIZATION INFORMATION**

Digitized pixel by pixel at CCD sensor  
 Live mode: 8 bit x 40 MHz (Dual channel 8 bit x 20 MHz)  
 Live image frame rate: 18 frames per second  
 Capture mode: 14 bit x 20 MHz (see chart for frame rate)  
 A/D Converter full scale set to 31,500 e (Gain=1)  
 Saved bit depths: 8, 12, 14 or 16 bit BW

**READ NOISE SPECIFICATIONS**

Read noise: 16 e- rms  
 Dark current: 0.003 e/p/s

**EXPOSURE**

0.5 ms to 286 minutes; captured and live mode automatic  
 exposure; captured and live mode manual exposure

**LENS MOUNT**

C-mount

**SEALING WINDOW**

Corning 7980 fused silica  
 320 nm–820 nm anti-reflection coating

**COMPUTER INTERFACE**

FireWire (IEEE 1394a)

**INPUT/OUTPUT**

**External device control:** TTL level output  
 with programmable delay

**External trigger input:** TTL level input

**MECHANICAL**

**Tripod mount:** 1/4 - 20 UNC

**Camera head:** 5.77" (147 mm) x 4.02" (102 mm)  
 x 3.15" (80 mm), 2.4 lbs. (1.09 kg)

**Power supply:** 2.29" (58 mm) x 5.20" (132 mm)  
 x 1.18" (30 mm), 0.70 lbs. (0.32 kg)

Binning	Captured image/Frame rate*			
	1600 x 1200	1024 x 1024	512 x 512	256 x 256
1x1	-	-	-	-
2x2	-	-	-	-
3x3	-	-	-	-
4x4	-	-	-	-
8x8	-	-	-	-

Frame rates to be available soon!

\*0.5 ms exposure with post-processing deferred, taken with 1.67 GHz AMD XP2000 processor running Windows XP. Other platforms may provide different results.

**Operating environment:** 0 to 30°C ambient, 0-80% relative humidity noncondensing

**Power requirements:** 100-240 VAC, 1.5A

**CERTIFICATIONS**

CE, FCC Class A, EN60950, RoHS compliant

**SPOT SOFTWARE FEATURES**

Live mode viewing window & controls, auto-exposure live and capture modes, image capture window, predefined and custom image setups, auto white balance, flat field correction, image enhancement tools in three color spaces (RGB, HSL, HSV), pan and zoom windows, multiple customizable floating taskbars, spot metering, non-destructive annotations, non-destructive calibration marks, measurement tools, sequential image capture and playback, exportable image archiving database (PC only), report generator, macro scripting, peripheral device control, interactive print dialog, online help menu, and Correct Color Technology™.

**FILE FORMATS**

BMP, TIFF, TIFF-JPEG, JPEG, JPEG-2000, PICT, AVI

**TIFF FILE SIZES**

8 bit BW / 1.83MB • 12 bit BW / 2.75 MB  
 16 bit BW / 3.66 MB

**DRIVERS INCLUDED**

Twain for supported Windows® operating systems  
 AppleEvent for supported Mac® operating systems

**3RD PARTY SOFTWARE**

Call or e-mail sales@i-cubeinc.com

**MINIMUM SYSTEM REQUIREMENTS**

**PC:** Pentium 400 Mhz or greater with Windows 98 SE, 2000, ME, or XP, 512 MB of RAM, Firewire/IEEE 1394a interface\* **Mac:** Power PC 400 Mhz G3 or greater with OS 10.2.8 or higher, 512 MB of RAM, Firewire/IEEE 1394a interface. Video card: 24 bit RGB @ desired resolution

**Items included:** Camera head, FireWire® data cable (6-pin), power supply cable, power supply, power cord, SPOT software install CD (includes drivers), software user guide, hardware user guide, 2 year warranty

\*Desktop computers may require IEEE 1394a to PCI bus interface card, laptop computers may require IEEE 1394a to PCMCIA interface card FireWire® and Mac® are registered trademarks of Apple Computers, Inc. Windows® is a registered trademark of Microsoft. Specifications are typical and subject to change. All specified performance is typical, unless noted otherwise.

**RT-3 7.20.06: Catalog # RT2520**